

REMARKS

The Office Action mailed October 9, 2007 has been carefully reviewed and the foregoing amendment has been made in consequence thereof.

Claims 1-10 are now pending in this application. Claims 1-10 stand rejected.

The rejection of Claims 1-10 under 35 U.S.C. § 103(a) as being unpatentable over U.K. Patent GB 2 052 251 to Büttner, et al. (hereinafter referred to as "Büttner") in view of either U.S. Patent 3,223,108 to Martz, Jr. (hereinafter referred to as "Martz") or U.S. Patent 5,315,847 to Takeda et al. (hereinafter referred to as "Takeda") is respectfully traversed.

Büttner describes a method of controlling the operation of a washing machine based on one of a measured surface tension, a pH value, and an electrical conductivity of water introduced into the washing machine. For example, Büttner describes limiting the number of rinsing operations of a washing machine based on the surface tension of the water in the washing machine reaching a predetermined surface tension. Büttner also describes limiting the number of rinsing operations of a washing machine based on the pH value of the water in the washing machine reaching a predetermined pH value or the conductivity of the water in the washing machine reaching a predetermined conductivity.

Martz describes an apparatus for controlling the characteristics of wash and rinse liquids of an automatic washing machine as a function of the relative conductivities of the liquids. The apparatus includes a sensing control (48) and a timer (49). The control circuitry of the sensing control (48) includes a series of sensors (32, 39, and 40) and a series of resistors (i.e. 94, 95, 96, 99, and 100). A first sensor (32) measures the conductivity of the rinse water containing detergent, and a second sensor (40) measures the conductivity of the incoming water supply. A signal is developed between points (113 and 114) of a bridge circuit, and a direct current is developed through resistor (99) of a value proportional to the difference in the conductivities measured. A second signal is developed at point (104) due to a high resistance measured by a third sensor (39). The currents developed by the two signals

flow through resistor (100) in opposite directions such that an insufficient potential is developed to actuate a trigger device (101). As the supply or rinse water continues to fill the washing machine, the conductivity of the water in the machine changes and the resistance increases due to the conductivity measured by sensor (32) more nearly equaling that measured by sensor (40). Thus, the net signal developed across resistor (100) increases, and when sufficient rinse water has been added to reduce the detergent concentration to the desired level, the trigger device (101) switches on activating relay (84) to continue the wash cycle.

Takeda describes a washing machine that includes a washing/dehydrating tank (5), a water storage tank (7), an agitation blade (6), and a sensor (15) for detecting an electric conductivity of washing water in the washing tank and the water storage tank. The sensor (15) is fixed to the bottom of the water storage tank (7). During a rinsing step, the conductivity of the rinsing water before rotation of the agitation blade (6) and the conductivity of the rinsing water after rotation of the agitation blade (6) is detected by the sensor (15) to be compared and calculated to determine the number of rinsing cycles to carry out an appropriate rinsing operation in accordance with the detergent contained in the washing.

Notably, none of Büttner, Martz, and Takeda describe or suggest a controller configured to control an amount of the fluid in the tub during a rinse cycle based on the conductivity of the fluid measured at an end of a wash cycle, wherein the controller is configured to determine a desirable achievable rinse level, measure an average liquid conductivity at predetermined water levels during the rinse operation, calculate an overall change in conductivity based on the measured average liquid conductivity at each predetermined water level, compare the calculated overall change in conductivity to the desirable achievable rinse level, and cease the rinse operation when the overall change in conductivity exceeds an acceptable change percentage of the desirable achievable rinse level.

Claim 1 recites a washing machine including “a tub; a resistance network comprising a sensor, a resistor, and a voltage source, said sensor positioned and configured to sense a

conductivity of a fluid in said tub; and a controller operatively coupled to said sensor and configured to control an amount of the fluid in said tub during a rinse cycle based on the conductivity of the fluid measured at an end of a wash cycle, said controller configured to: determine a desirable achievable rinse level; at predetermined water levels during the rinse operation, measure an average liquid conductivity; calculate an overall change in conductivity based on the measured average liquid conductivity at each predetermined water level; compare the calculated overall change in conductivity to the desirable achievable rinse level; and cease the rinse operation when the overall change in conductivity exceeds an acceptable change percentage of the desirable achievable rinse level.”

None of Büttner, Martz, and Takeda, considered alone or in combination, describes or suggests a washing machine, as recited in Claim 1. More specifically, none of Büttner, Martz, and Takeda describes or suggests a controller that is configured to control *an amount of the fluid* in the tub during a rinse cycle based on the conductivity of the fluid measured at an end of a wash cycle wherein the controller is configured to determine a desirable achievable rinse level, measure an average liquid conductivity at predetermined water levels during the rinse operation, calculate an overall change in conductivity based on the measured average liquid conductivity at each predetermined water level, compare the calculated overall change in conductivity to the desirable achievable rinse level, and cease the rinse operation when the overall change in conductivity exceeds an acceptable change percentage of the desirable achievable rinse level. Rather, in contrast to the present invention, Büttner describes a method of determining *a number of rinsing operations* based on when the rinsing water reaches the conductivity of the water introduced into the washing machine, Martz describes an electric circuitry that controls a series of switches based on the current created by the conductivity of the source water and the water in the washing machine, and Takeda describes a method of determining *a number of rinsing operations* based on a difference in the conductivity of the water in the washing machine before rotation of the agitation blade and after rotation of the agitation blade in the rinse cycle.

Accordingly, for at least the reasons set forth above, Claim 1 is submitted to be patentable over Büttner in view of Martz or Takeda.

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Claims 2-10 depend from independent Claim 1. When the recitations of Claims 2-10 are considered in combination with the recitations of Claim 1, Applicants submit that dependent Claims 2-10 likewise are patentable over Büttner in view of Martz or Takeda.

For at least the reasons set forth above, Applicants respectfully request that the Section 103 rejection of Claims 1-10 be withdrawn.

In view of the foregoing amendment and remarks, all the claims now active in this application are believed to be in condition for allowance. Reconsideration and favorable action is respectfully solicited.

Respectfully submitted,



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